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Body black, shining, prothorax as in the preceding, elytra at humeri distinctly wider than base of prothorax, intervals with confused fine punctures. Long. 3.5—4.5 mm. Southern States, 4 specimens. (Rather stouter in form than the preceding, and resembling almost exactly *B. farcus*, but quite different by the antennæ and beak.)..... 27. *ibis*.

Body brown, shining, prothorax longer than in the preceding and less rounded on the sides, more densely punctured with a faint dorsal carina; elytra at humeri distinctly wider than base of prothorax, intervals with confused fine punctures. Long. 3.5 mm. Georgia and Illinois, 4 specimens.

28. *scolopax Say*.

#### Bibliography.

*B. carinulatus Lec.* Proc. Ac. Nat. Sc., Phila., 1858, 79.

*B. transversus Say.* Curc. 18; ed. Lec. i, 282.

*B. aereus Sch.* Curc. viii, 141.

*B. interstitialis Say.* Curc. 18 and 26; ed. Lec. i, 282, 295; Journ. Acad. N. S. Ph. iii, 314; ed. Lec. ii, 176; *Sch.* iii, 684; viii, 149. In well preserved specimens small scale-like hairs are perceived in the rows of punctures on the elytral intervals.

*B. macer Lec.* Rep. Pac. R. R. Expl. xi, MS. 58.

*B. striatus Say.* Curc. 17; ed. Lec. i, 281.

*B. densus Lec.* Proc. Ac. Nat. Sc., Phila., 1859, 79.

*B. nigrinus Say.* Curc. 31; ed. Lec. i, 295. *Sch.* Curc. iii, 691; viii, 154.

*B. seriatus Lec.* Rep. Pac. R. R. Expl. xi, MS., 58.

*B. trinotatus Say.* Curc. 7; ed. Lec. i, 280; *vestitus*† *Sch.* Curc. iii, 718.

*B. mucoreus Lec.* Proc. Ac. Nat. Sc., Phila., 1858, 79.

*B. scolopax Say.* Curc. 26; ed. Lec. i, 295; *Sch.* Curc. iii, 699. I do not know for what reason Schönherr has referred this species to his first division; Boheman, in the description, mentions the antennæ as *minus crassæ*, which in fact they are.

#### Species unknown to me.

*B. T-signum Sch.* Curc. viii, 154.

*B. anthracinus Sch.* Ibid, iii, 727. Seems to be near 28. *ibis Lec.*

*B. confertus Sch.* Curc. iii, 728.

*B. californicus Motsch.* Bull. Mosc. 1845, ii, 372.

*B. pubescens Uhler*, Proc. Ac. Nat. Sc., Phila., 7, 417 belongs to *Centrinus* and is *C. pistior Sch.* = *Balaninus pistior Germ.*

#### The GYRINIDÆ of America, north of Mexico.

BY JOHN L. LE CONTE.

Species of this family are found in every part of the United States and contiguous northern regions, usually in large colonies; from their whirling motion of the surface of the water they are popularly known as *whirligigs*, and, on account of the agreeable fragrant odor of some of the species, as *apple-bugs*.

There is a remarkable uniformity of appearance in the species of each genus, which renders their definition and recognition somewhat difficult; for this reason, notwithstanding the very curious structural characters displayed in their organization, which are detailed in all systematic works, they are not favorites with collectors, and many of our species have remained unnamed.

Three genera are represented in our fauna:

Last ventral segment depressed, rounded at tip:

Scutellum distinct; labrum transverse..... *Gyrinus*.

Scutellum invisible; labrum transverse..... *Dineutus*.

Last ventral segment elongated, conical:

Scutellum invisible; labrum prominent.... *Gyretes*.

1868.]

## DINEUTUS McLeay.

## CYCLINUS Kirby.

The species of this genus are of larger size than those of the other two, and of less convex form; the elytra are marked with nine very slightly impressed, sometimes almost invisible, striæ or furrows; the labrum is rounded in front and ciliated, the scutellum is invisible, and the mesosternum is sparsely but coarsely punctured in front.

In the males the front tarsi are moderately dilated, and clothed beneath with feathery papillæ densely arranged in transverse lines, forming an elongated narrow brush; in *D. sublineatus*, *emarginatus*, *serrulatus*, and probably in *carolinus*, the front thighs of the male are dilated near the knee, on the anterior margin, into a more or less developed tooth, varying somewhat in form, according to the individual degree of development, but always well marked; in *D. vittatus*, *discolor* and *assimilis*, the tooth is entirely wanting.

The hind margin of the elytra is not toothed, nor strongly serrate, in any of our species, which may be divided into two groups as follows:

A. Sutural angles of elytra rounded.

B. Sutural angles of elytra well defined, sometimes slightly prolonged.

## A.

14.5—15.5 mm. Black or black-bronzed, very shining; elytra usually with a brighter bronzed vitta; striæ faint; sutural angle very much rounded; under surface dark chestnut-brown, middle and hind legs pale..... 1. *vittatus*.

15.5—16.5 mm. Dark olive above, not very shining; elytral striæ distinct; sutural angle moderately rounded; under surface black; middle and hind legs iridescent, with the tibiæ and tarsi brown..... 2. *sublineatus*.

9—12.5 mm. Black, or black-bronzed, not very shining; elytral striæ very faint; sutural angle very much rounded, apical margin flat; under surface dark brown or blackish, slightly bronzed; middle and hind legs, narrow margin and tip of abdomen paler, nearly testaceous..... 3. *emarginatus*.

10.5 mm. Black-bronzed, more shining; elytral striæ very faint; sutural angle less strongly rounded; apical margin narrowly reflexed; under surface brown; middle and hind legs, broad margin and tip of abdomen pale.

4. *carolinus* n. sp.

## B.

a. Body brown or testaceous beneath, oval, narrowed in front; hind margins of elytra very feebly sinuate; sutural angle of ♂ not, of ♀ very feebly prolonged.

12.5 mm. Body broadly oval, narrowed in front; upper surface black, slightly bronzed, shining; lateral margin of elytra broadly flattened; apical edge very finely serrate..... 5. *serrulatus* n. sp.

11—12.5 mm. More convex and narrower, narrowed in front; upper surface black-bronzed, rarely black, shining; lateral margin of elytra less broadly flattened; apical edge entire..... 6. *discolor*.

b. Body beneath black, slightly bronzed; middle and hind feet, and frequently sides and tip of the abdomen, pale; elytra distinctly sinuated near the tip in the ♀, and sutural angle very prominent in that sex.

10.5—12 mm. Black, usually slightly bronzed, ♂ more shining than the ♀; middle and hind legs testaceous; margin and tip of abdomen pale; elytra feebly striate, sparsely and finely punctulate; (♂ with the elytra not sinuate near the tip, feebly sinuate at the tip; sutural angle slightly prominent; ♀ deeply sinuate on the side near the tip; margin elevated at the sinuosity, sinuate again at the tip, with the sutural angle very prominent.).. 7. *assimilis*.

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*Bibliography and remarks.*

1. *D. vittatus* Aubé, Hydroc. 768; *Gyrinus vitt.* Germ. sp. nov. 32; *Cyclous opacus* Mels., Proc. Acad. Nat. Sci. Phila. ii, 29 (faded specimens). Middle and Southern States, not rare.

2. *D. sublineatus* Aubé, Hydroc. 775; *Gyrinus subl.* Chev., Col. Mex. cent. i; ♀ *D. integer* Lec., Proc. Acad. Nat. Sci. Phila. vii, 221. Arizona and Lower California.

3. *D. emarginatus* White, Brit. Mus. Cat.; *Gyrinus emarg.* Say, Trans. Am. Phil. Soc. ii, 108; ed. Lec. ii, 519; *D. americanus*† Aubé, Hydroc. 777 (nec. Linn.) Abundant in the middle and northern States; for remarks on *Gyrinus americanus* Linn., showing its probable identity with the West Indian *D. metallicus* Aubé, see the note of Dr. Schaum in Stettin Ent. Zeit. 1848, 337.

4. *D. carolinus*. I have seen but two ♀ specimens, collected in South Carolina; it closely resembles the preceding, but is more shining, and the apical margin of the elytra, instead of being flat, is very narrowly reflexed.

5. *D. serrulatus*. Middle and Southern States. I have seen but two ♂ ♀ specimens of this species, which resembles in form *D. assimilis*, but is easily distinguished by the fine serration of the apical margin of the elytra, the sutural angle less prominent, the lateral flattened margin broader and more reflexed, the posterior sinuosity of the elytra of the female much less, the striae of the elytra less visible, and finally by the front thighs of the male being armed with a strong sharp tooth.

6. *D. discolor* Aubé, Hydroc. 784; *Cyclous labratus* Mels. Proc. Acad. Nat. Sci. Phila. ii, 29. Abundant from Canada to Louisiana, and from Maine to Kansas; easily known by its narrower form and pale ferruginous under surface; the front thighs of the male are not toothed.

7. *D. assimilis* Aubé, Hydroc. 778. *Cyclinus ass.* Kirby, Fauna Bor. Am. iv, 78. *Gyrinus americanus* Say, Trans. Am. Philos. Soc. ii, 107; ed. Lec. ii, 519. Our most abundant species, usually known as *apple bug*; extends from Lake Superior to Texas, and from Maine to Kansas. The front femora of the male are not toothed.

## GYRINUS Linn.

“The species of this genus, as at present defined, are peculiar in having 11 rows of punctures on each elytron, and an oval transverse figure limited by punctures near the tip. The legs are always ferruginous, or testaceous. Usually two frontal impressions and two thoracic transverse impressions are well defined, but they are not equally evident in every individual, and are sometimes entirely obliterated.

“For the better definition of the species it must be observed that in those in which the upper surface has a shining metallic gloss, the color becomes sometimes black, and sometimes in part dark brown; in the same proportion the black color of the breast and the abdomen varies to ferruginous. The obliteration of the rows of punctures next the suture is of doubtful specific value, as is also the size of the specimens, both of which characters are subject to great variations.”—Zimmermann, MS. To this I may add that the frontal impressions are of no value in distinguishing species.

On account of the close resemblance between the species, it has been very difficult to identify them by the descriptions thus far published, and, as will be seen in the bibliography and remarks, the determinations are frequently different in each of the standard collections which have been independently formed in this country.

My own determinations are in some instances at variance with those of Dr. Zimmermann and Dr. Harris, and I hope may be sustained by reference to the types preserved in European collections; but at all events the possession of a much larger number of specimens, from more widely separated localities, has 1868.]

given me greater advantage in distinguishing and defining the forms to which specific names must, in the present condition of science, be given.

The species before me may be arranged in the following groups, the mesosternum being of normal form in all except *pectoralis*:

A. Scutellum flat:

- a. Under side margin of prothorax and epipleuræ testaceous.
  - b. Under side margin of prothorax and epipleuræ metallic black.
- B. Scutellum finely but distinctly carinate:  
(Under side margin of prothorax and epipleuræ testaceous.)

A—a.

\* Under surface uniform testaceous, or brown.

6—6.75 mm. ♀. Elongate oval, polished black, more or less bronzed; punctures of the elytral rows approximate, rather fine; tip much rounded, outer angle not distinct..... 1. *confinis* Lec.

6 mm. ♀. A little less elongated, polished black, not bronzed; punctures of the elytral rows stronger, and equally closely placed. 2. *fraternus* Couper.

4.5—5 mm. Smaller, not very elongate, polished black; margins and sides broadly bronzed; punctures of outer elytral rows stronger and moderately approximate; abdomen sometimes dark at the middle..... 3. *limbatus* Say.

5.5 mm. ♀. More elongated, uniformly black bronzed; punctures of elytral rows rather strong, moderately approximate..... 4. *aeneolus*, n. sp.

4.5—5 mm. Of the same form, color and sculpture as *limbatus*, scarcely bronzed and a little wider; the ventral segments of the abdomen in mature specimens are darker brown, the punctures of the elytral rows more approximate, with the last segment paler..... 5. *dichrous*, n. sp.

5.25 mm. ♂. More elongate, strongly attenuated before and behind, and more elevated at the middle than usual, black, highly polished, broadly bronzed on the sides, but not on the suture or reflexed margin of the elytra; rows composed of larger bronzed punctures not very approximate, becoming coarser at the sides; tip truncate, slightly rounded; outer angle not very obvious; body beneath and legs ferruginous. (Easily distinguished by its more compressed convex form and coarser punctures.)..... 6. *elevatus*, n. sp.

5.5—6.5 mm. Elongate oval, more narrowed in front, black, highly polished; margins and sides slightly bronzed; tip of elytra more concave than usual; (margin not interrupted); rows of elytral punctures bronzed, well marked, approximate; under surface uniform reddish-brown. (Resembles *confinis*, but is much larger and more narrowed in front, from the base of the elytra)..... 7. *consobrinus* Lec.

5—6.5 mm. Of the same form, color and sculpture as *consobrinus*, but a little broader and with the reflexed margin of the elytra interrupted near the tip by a small flattened space, and the tip less rounded..... 8. *plicifer* Lec.

6.5—7 mm. Oval, less elongate, black, very highly polished, iridescent; margins and sides bronzed; rows of punctures of elytra well marked, approximate; under surface reddish-brown, sides and tip of abdomen a little paler. (A beautiful species, easily known by its larger size and more brilliant iridescent surface; in one specimen the under surface is nearly black.)

9. *ventralis* Kirby.

6.5 mm. Similar in size, color and sculpture to *ventralis*, and equally brilliant, but somewhat narrower in form, with the tip of the elytra more suddenly truncate, less rounded and with the outer angle obtuse, only slightly rounded and quite distinct..... 10. *aquiris*, n. sp.

\*\*Trunk dark piceous; abdomen with tip and lateral spots pale.

6—6.75 mm. More elongate than usual, black, highly polished, slightly iridescent; margins bronzed; punctures of elytral rows bronzed, fine, well marked, approximate; tip more rounded than usual..... 11. *maculiventris*, n. sp.

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\*\*\* Trunk black bronzed, or piceous bronzed; tip of abdomen reddish-brown.

7.25—8 mm. Oval, less elongated, black, shining, but not polished, very minutely punctulate or rugose; margins bronzed; tips of elytra more concave than usual; punctures of rows well marked, approximate. (Easily distinguished by the fine punctuation of the upper surface and the bronzed color beneath.)..... 12. *affinis Aubé*.

A—b.

a. Body oval in form, regularly convex.

\* Anterior margin of mesosternum regular in form.

5.25—5.75 mm. Oval, equally attenuated at each end, black, shining, highly polished; margins and sides bronzed; elytra with rows of deeply impressed, bronzed, coarse punctures, so approximated that the outer striae appear impressed; tip broadly subtruncate, feebly rounded; outer angle distinct.

13. *parvus Say*.

5.5—6.5 mm. Oval more elongate, nearly equally narrowed before and behind, black, shining, highly polished; margins and sides bronzed; elytral rows composed of approximate bronzed punctures, the outer ones a little stronger than the inner; tip of elytra strongly rounded, outer angle not distinct; last ventral segment sometimes dark reddish-brown; sides of prothorax slightly rounded.

α. Apical oval of punctured curve of elytra composed of large, coarse punctures.

β. Apical oval curve composed of very fine punctures, almost obliterated; middle and hind legs darker than usual..... 14. *picipes Aubé*.

5.25 mm. Smaller and a little narrower than *picipes*, of a less shining black, feebly bronzed, more brilliantly at the margins and sides; elytral rows composed of less approximate bronzed punctures, the outer ones a little stronger than the inner; tip of elytra strongly rounded; outer angle not distinct; apical oval curve composed of distant, well marked punctures; middle and hind legs darker than usual..... 15. *opacus Sahlb*.

7 mm. Larger and a little stouter, black, highly polished and with bluish reflections; margins and sides bronzed; elytral rows composed of fine bronzed, very closely approximated punctures, outer rows distinctly impressed; tip of elytra broadly truncate, feebly rounded; outer angle distinct, though obtuse and rounded; legs ferruginous, under surface black; last ventral segment very dark brown..... 16. *borealis Aubé*.

6 mm. Of the same form, color and sculpture as the preceding, but still more highly polished; the elytra are still less rounded at tip, and the punctures of the rows are less fine and less approximate, and the outer rows, though a little stronger, are not impressed; the under surface is black, the last ventral segment ferruginous in one, but very dark brown in two other specimens; the legs ferruginous..... 17. *pernitidus*, n. sp.

6—7 mm. Of the size and form as *borealis*, but above black, less highly polished and not at all bronzed; tip of elytra more rounded, with the outer angle less distinct; the rows are composed of small but less approximate punctures, and the outer rows, though stronger, are not impressed; the under surface is black, feebly bronzed; the legs ferruginous, and the last ventral segment dark brown..... 18. *lugens Zim*.

5—6 mm. Smaller, more elongate, black bronzed both above and beneath; upper surface not highly polished; elytra with the tip broadly but not strongly rounded; outer angle not distinct; rows composed of not very fine, less approximate punctures, outer rows but little stronger than the inner ones; legs and last ventral segment ferruginous. (Resembles in form, size and sculpture *G. opacus*, but is more bronzed above and beneath, the legs and last ventral segment are paler and the inferior pair of eyes are larger.... 19. *analis Say*.

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\*\* Front margin of mesosternum trilobed, with an oblique impression each side.

5—6 mm. Oval, shining black, highly polished, margins and sides bronzed; elytra at tip moderately rounded; outer angle not distinct; rows composed of bronzed, approximate punctures, outer rows not stronger than the inner ones; beneath black, slightly bronzed; legs ferruginous, thighs darker. (Of the same size and form as *G. limbatus* and *consobrinus*, but easily recognized by the very peculiar form of the mesosternum.)..... 20. *pectoralis*, n. sp.

b. Body broader, subovate, more suddenly convex at the middle and obliquely declivous before and behind.

5.5 mm. ♀. Uniform black, bronzed above; elytra with the tip broadly truncate, feebly rounded, outer angle distinct but rounded; rows composed of fine approximate punctures, outer ones not stronger, lateral margin more broadly reflexed than usual. Beneath black, with slightly metallic reflection, last ventral segment dark brown, legs ferruginous; mesosternum feebly channelled for its entire length..... 21. *gibber* *Zim.*

#### B.

4—4.5 mm. Elongate oval, bluish black, not highly polished, sides broadly bronzed; elytra with the tip truncate, feebly rounded, outer angle somewhat distinct, though rounded; rows composed of approximate bronzed punctures, the outer ones stronger than the inner; under surface, inflexed margins and legs ferruginous, anterior ventral segments sometimes darker; mesosternum with a very deep median furrow..... 22. *minutus* *Linn.*

3.5—4.5 mm. Of the same size and form as *minutus*, but a little narrower and more convex and of a more dull black color, though slightly bronzed at the sides; prothorax more rugose, rows of the elytra composed of more approximate punctures, and especially distinguished by the mesosternum being but feebly channelled in front, with a large elongate posterior fovea; under surface always ferruginous yellow.

23. *rockinghamensis* *Zim.*

#### Bibliography and Remarks.

1. *G. confinis*. Similar in form to the Californian *G. consobrinus*, but less polished, with a slight bronzed color over the whole upper surface, more brilliant at the suture and margins. Abundant at Lake Superior. I have also several specimens from the interior of Oregon or Montana.

2. *G. fraternus* *Couper*, Canadian Naturalist, 2d ser. ii, 60. Canada and Lake Superior; for types I am indebted to Mr. W. Couper, late of Quebec, but now of Ottawa. Is of the same size as the preceding, but a little more robust, and easily distinguished by the entire absence of bronzed lustre on the upper surface, even at the suture and margin.

3. *G. limbatus* *Say*, Trans. Am. Phil. Soc. ii, 109; ed. Lec. ii, 520. Canada and Lake Superior. In one specimen the suture is not bronzed, and in one the abdomen is dark brown at the middle. I received from the late Dr. T. W. Harris a specimen of this species from Western New York, as No. 1642, of his collection, *G. analis* *Say*, and in Dr. Zimmermann's collection it is named *G. limbatus* *Say*. From the former it differs by the under surface being ferruginous. It is quite possible that the determination of Dr. Zimmermann is correct, and although I have seen no specimens from Georgia and Florida, the locality mentioned by Say, I have no other which agrees so nearly with his description, or which resembles in appearance *G. analis*, with which he compares it.

4. *G. aeneolus*. One specimen, Illinois, Mr. Willcox. This species is easily known by the uniform and tolerably brilliant bronze color of the upper surface, which, with the more elongate form and ferruginous under surface perfectly defines it.

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5. *G. dichrous*. New England. I received this species from Dr. Harris as bearing the name in the Melsheimer collection; specimens under the same name are contained in Dr. Zimmermann's cabinet, now in possession of Dr. Samuel Lewis. It closely resembles *G. limbatus*, but is a little more robust, and not bronzed on the margin and suture.

6. *G. elevatus*. One specimen, New York, No. 1829 Harris' collection. Very distinct by its more convex elevated body, more strongly attenuated at each end, and by the much coarser punctures of the outer elytral rows.

7. *G. consobrinus* *Lec.* *Ann. Lyc. Nat. Hist.* New York, v, 209. Abundant in California, at San Francisco, Mendocino, &c.

8. *G. plicifer* *Lec.*, *ibid.* California, not abundant. Easily known by the reflexed edge of the elytra being interrupted near the tip by a slight depression, so that the appearance of a small fold is produced, extending from the small depression to the apical truncation. I received from Mr. A. Murray a smaller specimen, which agrees sufficiently with the description of *G. marginiventris* Motsch., *Bull. Mosc.* 1859, ii, 174, to induce me to place the latter as a synonym.

9. *G. ventralis* *Kirby*, *Fauna Bor. Am.*, iv, 80; *Aubé. Hydroc.* 672. A common species from Pennsylvania, northward to Lake Superior; in the Zimmermann collection it is determined as *G. ventralis* Kirby, but although agreeing in other respects with Kirby's description it seems generally too large to be referred to the latter, which is compared with *G. aeneus*, a much smaller species. Specimens occur in which the under surface is chestnut brown, with the inflexed margins, the sides and tip of the abdomen and the legs paler ferruginous; *G. limbatus* † *Aubé*, 670 (nec Say), is considered by Dr. Zimmermann to belong to this species.

10. *G. aquiris*. Middle States; differs from the preceding in the narrower form, and more squarely truncate elytra; the under surface is darker brown, in one specimen nearly black, with the inflexed margins, sides and tip of abdomen, and feet paler ferruginous; it is less elongate than the next species and the pale color of the sides of the ventral segments is not arranged in spots but is diffused. On account of the more sudden truncation of the tips of the elytra I would refer *G. limbatus* † *Aubé* to this, rather than to the preceding species.

11. *G. maculiventris*. Abundant at Lake Superior; one specimen from Montana; more elongate than usual, and easily recognized by the dark brown color of the under surface, with well marked pale triangular spots each side on the ventral segments.

12. *G. affinis* *Aubé*, *Hydroc.* 669. New York to Lake Superior; I have also two specimens from Middle California. Our largest species, easily distinguished by the upper surface of both sexes, (not alone of the ♂ as mentioned by Mr. Aubé), being covered with very fine lines, producing under a high lens an aciculate appearance. I received from Dr. Harris one specimen as No. 819 var. *G. limbatus* Say., *teste* Say, but its much larger size, as well as the dark bronzed color of the greater part of the under surface, completely separate it from that species.

13. *G. parvus* *Say*, *Trans. Am. Phil. Soc.*, iv, 448; *ed. Lec.* ii, 562; *Aubé*, *Hydroc.* 701. Two specimens from Texas agree with the descriptions of this species; they differ from the other small species having the under surface black bronzed, by the more coarse punctures of the elytral rows, the outer ones of which become, by the approximation of the punctures, slightly impressed.

14. *G. picipes* *Aubé*, *Hydroc.*, 694; *Mannh. Bull. Mosc.* 1843, 223; *ibid.*, 1853, ii, 164. Alaska and Oregon. I have three specimens collected in Labrador, one of which does not seem to differ from the types from Alaska kindly sent me by Baron Chaudoir and Count Mnizech; in one of the specimens 1868.]



mens the inflexed margins are slightly tinged with dark reddish brown, as mentioned in the remarks of Manuerheim under the second reference. Two specimens (♂ ♀) from Labrador, are much smaller, only 5.25 mm. long, but do not seem to differ in any other respect; var. b, of the last reference, is probably a distinct species, but I have seen no specimen to correspond with it.

α. A race of this species is represented by four specimens from Lake Superior, which resemble in appearance the typical *G. picipes*, but differ only by the apical crescentic oval curve of the elytral being composed of larger punctures. This differs from the others of the same group (except *pernitidus*) by the more elongate form, more highly polished surface, and more brilliantly bronzed suture, margin and punctures; *G. pernitidus* is more highly polished, but has the elytral rows composed of less approximate punctures; *G. borealis* is larger and stouter than the two species in question, though otherwise resembling them very closely.

15. *G. opacus* Sahlberg, Ins. Fenn., 47; *Schiödt*, Naturhist. Bidrag. Grönland, p. 54; *G. æneus* Aubé, Hydroc. 690, (fide Redtenbacher). Mr. Drewsen, of Copenhagen, has kindly sent me three specimens of this species, with a very complete series of the other Coleoptera of Greenland. *G. æneus* Kirby, Fauna. Bor. Am. iv, 80, must according to the size given (2 4-5th lin.) be a much larger species, which is unknown to me, unless it be *G. borealis*.

16. *G. borealis* Aubé, Hydroc. 692. New York to Lake Superior; the distinguishing characters of this have been sufficiently pointed out in the remarks upon other species.

17. *G. pernitidus*. The type of this species is a single ♀ from Georgia; with it I have associated two other females sent me by Dr. Harris, as No. 242, *analis*? Say; one of the specimens agrees perfectly with the type, while in the other the punctures of the rows of the elytra are much less approximate, the inner rows less strongly marked, and the last ventral segment nearly black, instead of ferruginous, as in the type; it is probably a distinct species, and is perhaps a small specimen of *G. Sayi* Aubé, 698, which is otherwise unknown to me.

Dr. Zimmermann determined this as *G. borealis*, but the size given in the description of Mr. Aubé (7 mm.) represents a larger species, and I have accordingly referred it to the preceding.

18. *G. lugens* Zimm. MS. New England and Lake Superior; easily known by the larger and stouter form, similar to *G. borealis*, but not at all bronzed above.

19. *G. analis* Say, Trans. Am. Phil. Soc., ii, 108; ed. Lec. ii, 520; ibid. iv, 448, ed. Lec. ii, 562; *Aubé*, Hydroc. 697. Louisiana to Lake Superior, easily distinguished by the upper surface uniformly bronzed; the under surface black bronzed, with the last ventral segment and feet ferruginous; the form is narrower than in the other species of this group, except *G. opacus*, which is, however, less oval and more narrowed behind.

20. *G. pectoralis*. Lake Superior and Hudson Bay Territory, (Fort Liard).

21. *G. gibber* Zimm., MS. I have seen but the single specimen of this peculiar species found in North Carolina by Dr. Zimmermann, from whose MS. I have translated the description; this unique specimen was kindly given to me by Dr. Samuel Lewis.

#### *Bibliography and remarks.*

22. *G. minutus* Fabr., Syst. El. i, 276; *Kirby*, Fauna Bor. Am. iv, 81; *Aubé*, Hydroc. 683. Lake Superior, abundant. I have omitted much of the European synonymy of this species, as not applicable to our fauna; it is, however, necessary to observe that the fine carina of the scutellum which distinguishes this and the next, so far as I know, from all others of the genus

[Dec.

is not mentioned by the authors above cited, nor by Redtenbacher; but attention is called to it in the description of Thomson, Skandiv. Coleoptera, ii, 117.

23. *G. rockinghamensis* Zimm., MS. Dr. Zimmermann mentions in his MS. that he found this species in schools of several thousands, in ponds at Rockingham, North Carolina. I have translated the description from his notes.

*Species not identified.*

*G. impressicollis* Kirby, Fauna Bor. Am. iv, 79. Mr. Adam White, B. M. Cat. 45, refers this to *G. borealis* Aubé, but the great size, unless an error of print, (4 lines, = 8.3 mm.) renders such reference very improbable.

*G. Sayi* Aubé Hydroc. 698. See remarks under No. 17.

*G. fuscipes* Motsch. Bull. Mosc. 1859, ii, 173. California; perhaps *G. consobrinus* Lec.\*

GYRETES Brullé.

1. *G. sinuatus*, elongate oval, very convex, dark bronzed, very shining; sides of prothorax and elytra densely punctured and pubescent, punctures reaching the suture; tip of elytra broadly and obliquely truncate, outline of the truncation very slightly but distinctly sinuate, outer angle distinct, slightly prominent, inflexed margins ferruginous; body beneath and legs ferruginous, breast and base of abdomen darker. Long. 6 mm. Lec. Ann. Lyc. Nat. Hist., New York, v, 210.

Abundant in the Colorado River, near Fort Yuma, California.

2. *G. compressus*, still more elongate, and more convex than the preceding, and more narrowed in front than behind, dark bronzed, shining; sides of prothorax and elytra densely punctured and pubescent, punctures not quite reaching the suture; tip broadly and obliquely truncate and very feebly sinuate, outer angle obtuse, distinct, slightly prominent, inflexed margins black; body beneath dark brownish red, feet and tip of abdomen paler. Long. 6.75 mm. Lec., New Spec., North Am. Col., (Smith's Inst.) 23.

One specimen collected at Quincy, Illinois, by Mr. Willcox.

**Notes on the Species of AGONODERUS, BRADYCELLUS and STENOLOPHUS inhabiting America north of Mexico.**

BY JOHN L. LE CONTE, M. D.

The final demolition of the genus *Acupalpus* Dej. seems to have been accomplished by Baron Chaudoir, in his recent notes upon North American Carabidae,† by the reference of most of the species contained in my third division of *Stenolophus*‡ to *Agonoderus*. In fact, his suggestion is so perfectly natural, that it is strange that the resemblance in form and sculpture, and in the proportion of the joints of the hind tarsi, with the absence of sexual characters in the front tarsi, did not long since cause these species to be placed in the proper position to which he has assigned them.

In reviewing the specimens of my collection with the aid of the remarks of my learned friend, I have found such resemblances in form between the species

\* Mr. Uhler has sent me a portion of a large school of *Gyrinus*, collected in Charles River, near Cambridge, Mass., which shows that in some cases at least the species do not live apart. An examination of all the individuals captured has given me the following results:—

<i>G. limbatus</i> , 4♂, 5♀.	<i>G. fraternus</i> , 2♂, 2♀.
<i>G. dichrous</i> , 5♂, 6♀.	<i>G. picipes</i> ? (race), 5♂, 3♀.
<i>G. confinis</i> , 12♂, 7♀.	<i>G. lugens</i> , 18♂, 4♀.

I have observed at Lake Superior, however, that the species are generally not found intermixed.

† Revue et Mag. de Zoologie, 1868.

‡ Vide List of Coleoptera, North Am., p. 13.